

### Remarks

In view of the above amendments and the following remarks, reconsideration of the outstanding office action is respectfully requested.

By the above amendments to the specification, the trademark REACTIGEL has been capitalized and the full terminology for the abbreviation SSC has been provided. No new matter has been added. By the above claim amendments, claims 1, 5, 12, 25, 29, 38, 40-42, 46, 64, 65, 68, 74-76, 79, and 82 have been amended and claims 2-4, 6-11, 20, 24, 28, 30, 31, 33-35, 37, 47, 52-61, 66, 67, 69, 72, and 73 have been canceled. Written descriptive support for the claim amendments is found in original claim 4 and paragraphs [0037]-[0038] of the present application. No new matter has been added by the claim amendments. Claims 1, 5, 12, 25, 29, 32, 38-43, 45, 46, 48-50, 64, 65, 68, 70, 71, and 74-88 are pending, with claims 25, 29, 32, 38-43, 45, 46, 48-50, 64, 65, 68, 70, 71, and 74-88 having been withdrawn from consideration.

Applicants respectfully request that the U.S. Patent and Trademark Office (“PTO”) reconsider the restriction of claims 65, 68, 70, 71, and 74-85, which are directed to an isolated nucleic acid molecule, a DNA construct, an expression vector, and a host cell. The subject matter of these claims forms a single general inventive concept with the subject matter of claims 1, 5, and 12 under PCT Rule 13.1. In particular, claims 65, 68, 70, 71, and 74-85, share with claim 1 the special technical feature of the isolated polypeptide.

The objection to the specification is respectfully traversed in view of the above amendments to the specification.

The rejection of claims 1-12 under 35 U.S.C. § 112 (2<sup>nd</sup> para.) for indefiniteness is respectfully traversed in view of the above claim amendments.

The rejection of claims 1-8 and 12 under 35 U.S.C. § 102(b) as anticipated by WO 98/39424 to Wakefield (“Wakefield”) is respectfully traversed.

Wakefield discloses an isolated DNA comprising part or all of a *PRTI* gene of a non-rat infecting species of *Pneumocystis carinii*.

However, Wakefield nowhere teaches or suggests an isolated polypeptide encoded by a nucleic acid molecule that (i) shares at least about 85 percent identity to the nucleotide sequence of 1-837 of SEQ ID NO: 4 or (ii) hybridizes to the complement of the nucleotide sequence of 1-837 of SEQ ID NO: 4 under stringency conditions comprising a hybridization medium that contains at most about 10X standard sodium citrate (SSC) and a temperature of about 50°C or greater followed by wash conditions at or above stringency conditions of the hybridization, as required by amended claim 1 of the present application.

A sequence alignment (the results of which are attached hereto as Exhibit A) between nucleotides 1-837 of SEQ ID NO: 4 of the present application and Wakefield's *PRTI* demonstrate a 34.9% identity between the two sequences. In view of the dissimilarity between these two sequences, it cannot be asserted that Wakefield teaches or suggests a nucleic acid molecule that shares at least about 85 percent identity to the nucleotide sequence of 1-837 of SEQ ID NO: 4. Further, as a person of ordinary skill in the art is well aware, hybridization between DNA sequences requires sequence homology. Two dissimilar sequences, by definition, will not hybridize to respective complements under, *e.g.*, the conditions recited in amended claim 1 (*i.e.*, stringency conditions comprising a hybridization medium that contains at most about 10X standard sodium citrate (SSC) and a temperature of about 50°C or greater followed by wash conditions at or above stringency conditions of the hybridization). In view of the lack of similarity between Wakefield's *PRTI* and nucleotides 1-837 of SEQ ID NO: 4 of the present application, it likewise cannot be asserted that Wakefield teaches or suggests an isolated polypeptide encoded by a nucleic acid molecule that hybridizes, under the specified stringency conditions, to the complement of the nucleotide sequence of 1-837 of SEQ ID NO: 4.

Since Wakefield does not teach or suggest each and every limitation of claim 1 (and claims 2-8 and 12 dependent thereon), the anticipation rejection based on this reference is improper and should be withdrawn.

The rejection of claims 9 and 10 under 35 U.S.C. § 103(a) for obviousness over Wakefield is respectfully traversed for substantially the same reasons as set forth in the preceding rejection. Accordingly, this rejection is improper and should be withdrawn.

The rejection of claim 11 under 35 U.S.C. § 103(a) for obviousness over Wakefield in view of U.S. Patent No. 6,165,469 to Mann et al. ("Mann") is respectfully traversed.

Mann is cited for teaching that it was routine and conventional in the art at the time of the invention to include multiple copies of a given art-known single molecule, small peptide, or an epitope to produce a single fusion protein for the purpose of enhancing the immunogenicity of the single small peptide or epitope. Even accepting that the PTO's assertion is true, which applicants do not admit, the obviousness rejection is deficient because Mann does not overcome the above-noted deficiencies of Wakefield. Therefore, the obviousness rejection based on the combination of these references is improper and should be withdrawn.

The objections to the claims are respectfully traversed in view of the above claim amendments.

In view of the foregoing, applicants submit that this case is in condition for allowance and such allowance is earnestly solicited.

Respectfully submitted,

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**Exhibit A:** Sequence Alignment

## EMBOSS Align Results

Needle Results	
Matrix	Blosum62
Open gap penalty	10.0
Gap extension penalty	0.5
Needle output	needle-20100305-1909243557.output
SUBMIT ANOTHER JOB	

```
#####
# Program: needle
# Rundate: Fri 5 Mar 2010 19:09:28
# Commandline: needle
# [-asequence] /ebi/extserv/old-work/needle-20100305-1909243557.input.1
# [-bsequence] /ebi/extserv/old-work/needle-20100305-1909243557.input.2
# -outfile /ebi/extserv/old-work/needle-20100305-1909243557.output
# -gapopen 10.0
# -gapextend 0.5
# -datafile EBLOSUM62
# -sprotein1
# -sprotein2
# -auto
# Align_format: srspair
# Report_file: /ebi/extserv/old-work/needle-20100305-1909243557.output
#####

#=====
#
# Aligned_sequences: 2
# 1: 4_1-837_10/584,871
# 2: PRT1_98/39424
# Matrix: EBLOSUM62
# Gap_penalty: 10.0
# Extend_penalty: 0.5
#
# Length: 846
# Identity: 295/846 (34.9%)
# Similarity: 295/846 (34.9%)
# Gaps: 271/846 (32.0%)
# Score: 1060.5
#
#
#=====

4_1-837_10/58 1 ACCAATATATCCGAACCAGCACTGCCTGATAAGGATCCTCAACCTACATC 50
                .|.|.|.| | | | | | | | | | | | | | | | |
PRT1_98/39424 1 -----tgaagtag--ctgcc-----gttcgaaatactgtttg 30

4_1-837_10/58 51 T-TCACCTCAG-C-CAAAACCTCGGCCAAGACCTCGACCTCAACCTCAAC 97
                | .|.|.|.|. | .|.|.|.|. | | | | | | | | | | | | | |
PRT1_98/39424 31 tggaatcgggtgttgcatatgaat--ccaaagtcttctgg-tatt--ttatt 75

4_1-837_10/58 98 CTCATCCAC--ATCCAAAACCTCAGCCTCAGCCGACGCCAGAACCTCAGC 145
                | | | | | | | | | | | | | | | | | | | | | | | |
PRT1_98/39424 76 ctttttgactgaatctaata--taatatcatata-aggtttgcgaa--ta- 119

4_1-837_10/58 146 CTCAGCCGGCGCCAGAACCTCGACCTCAGCCGACGTCAAAACCTCGACCT 195
```

1..1111 111...1.1 .11.11. 11.1 ...1

PRT1_98/39424	120	-ttatccgg-gcctataac-agatcctt----gatg-----aag----	150
4_1-837_10/58	196	CAGCCAACGTCAAAACCTCGACCTCAGCCGACGCCAGAACCTCG-ACCTC	244
PRT1_98/39424	151	111 .1.11 1..111...11 1.. 1   1...111.11. 1..1.	190
PRT1_98/39424	151	cag-aatcg-cttaattatga--ttt-----c-cataaaaatcatattta	190
4_1-837_10/58	245	TGCCGGTGCCAGGACCTGGACCTCTGCCGGTGCCAGGACCTCGACCTCAA	294
PRT1_98/39424	191	1..11.11...11 111 1 111.11.1 1 ...1.	220
PRT1_98/39424	191	ttcctgtagttgg---gga-c-ctgacgat-----g---atgg-----	220
4_1-837_10/58	295	CCTCAACCTCAACCTCAACCTCAGCCTCAACCTCAACCTCAGCCTCAACC	344
PRT1_98/39424	221	1. 11.11.....1..1111 .1.	242
PRT1_98/39424	221	-----aa-----aaactgttgatgggcct--tct	242
4_1-837_10/58	345	TCAACCTCAGCCTCAGCCTCAGCCTCAGCCTCAGCCTCAACCTCAGCC-G	393
PRT1_98/39424	243	11 .11.....11.11. 1 .11.1.....1..1.11.....1.. 1	287
PRT1_98/39424	243	tc--tcttgttcttagag-c--acttattaatggagtaaataatggaagg	287
4_1-837_10/58	394	-AAGCCTCAACCACCATCTCAGTCAACATCAGAATCAGCATCGCAATCCA	442
PRT1_98/39424	288	1..11.....11111111 1...1.11111 1.111	326
PRT1_98/39424	288	aatgggttggttctatctatgt---ttttgcatcag---gaaat---	326
4_1-837_10/58	443	AACCAAAACCAACAACACAAACAAACCGTCACCGAGACCACACCCAAAG	492
PRT1_98/39424	327	.....1..1.1..11.1111.11 11..	354
PRT1_98/39424	327	-----ggtggaatatatgaagataactgt-----aatt	354
4_1-837_10/58	493	CCGGTGCCAAAACCATCATCGATAGACACAGGACCATCAAAATCGGATTC	542
PRT1_98/39424	355	.11.11 .1....11. 1111.....1111.1..11.11...1	398
PRT1_98/39424	355	tcgatg---gatatgcaa--atagtgtgtttaccattactattggtggc	398
4_1-837_10/58	543	A-AGCTTCATTTTACAGTAACAAAAACAATAACAAAGATATCAGAAACA	591
PRT1_98/39424	399	1 11.1..1..1..1.11 1.. 1   1. 111.11 11.111.1	436
PRT1_98/39424	399	atagataaacatggaaag---cgt---c--tt--aaatat-tctgaagc-	436
4_1-837_10/58	592	GAAAAACCATCTACAAAACCATCTGTGAAACCAACCTCTACAAAGACAAC	641
PRT1_98/39424	437	... .111.1..1.1.1.1 11 1 1111.1..11..	469
PRT1_98/39424	437	---gtg--ttcttctcagctagc--tg-----t-tacatatgcagg	469
4_1-837_10/58	642	ATCAAAACCATCTACAAAACCATCTACAAAACCATCTGTAAAACAGCCT	691
PRT1_98/39424	470	...111...1...11.11... 1. 11...1. 111.1.... 1	509
PRT1_98/39424	470	tggaagtgcggatatattt--gta-acttta-ttctattttt-----t	509
4_1-837_10/58	692	CTACAAAGACAACATCAGAATCAGAAAAACCAACATTGGAAGAAGTTCCA	741
PRT1_98/39424	510	.1...1..1...11.1.111.11 .1.1 1.11 .11.111	548
PRT1_98/39424	510	tttatataaatattataataattag-tata-ctac-----tgatgtt---	548
4_1-837_10/58	742	GAAACTAAAGGGAATGGTGTAAGAGTAATAGGATTTGAGGGGTTACAATT	791
PRT1_98/39424	549	1..11 111. 11. 1111.111 11 11..11 1.111..1	584
PRT1_98/39424	549	ggtac-aaat--aaa--tgtacgag---ta-gacatg-gtgggtacc----	584
4_1-837_10/58	792	ATTATCAATGATTGTTGCAATAATAATTGGGATATGGATAATGTAA	837
PRT1_98/39424	584	-----	584

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